

Dried leaves steeped in wine are given for nervous complaints. Regarded as antiseptic, antispasmodic, astringent, cardiac, cardiotoxic, digestive, diuretic, emetic, lactagogue, narcotic, nervine, purgative, stimulant, and vasodilator, mistletoe has been recommended for such things as amenorrhea, apoplexy, arthrosis, asthma, arteriosclerosis, cancer, chilblains, chorea, convulsions, delirium, epilepsy, heart disease, hemorrhage, hepatitis, hypertension, hypertomy, hysteria, lumbago, malaria, metrorrhagia, nervous debility, neuralgia, neuritis, otitis, piles, St. Vitus disease, spasms, splenomegaly, spondylosis, tumors, typhoid, ulcers, urinary disorders, uterosis, varicose veins, and vertigo. The juice of the berries is applied externally to sores and ulcers. The tea is compressed onto varicose veins. In Europe the drug (derived from leaves, stems, and berries) enters several proprietary hypotensive drugs. It is also used for hepatic and splenic enlargements, and in hemorrhoids and lumbago.<sup>1</sup> Koreans make a tonic tea for colds, lumbago, rheumatism, and weak muscles. Chinese use the dried inner portions of the stem as antispasmodic, carminative, hypotensive, laxative, lactagogue, and sedative, believing it promotes hair growth, alleviates liver congestion, stimulates the kidneys, strengthens bones, quiets the pregnant womb.<sup>16</sup>

Said to contain aromatic vasopressor amines (sympathomimetic amines).<sup>11</sup> The active part, the resin viscin, is accompanied by mucilage, tannin, a fixed oil, inositol, xanthophyll, sugar, and starch. Ripe berries contain 750 mg vitamin C per 100 g; leaves, 75 mg. Carotenoids in the leaves include alpha- and beta-carotenes and lutein. The hypotensive action of the drug is attributed to acetylcholine, histamine, gamma-aminobutyric acid, and flavones. Oral efficacy of these items is doubtful.<sup>1</sup> Freshly prepared juice contains arginine, asparagine, cysteic acid, hydroxylysine, and 1-kynurenine.<sup>16</sup> Leaves and twigs contain beta-amyrin, lupeol, oleanolic acid, tyramine, beta-phenylalanine, acetylcholine, ceryl alcohol, mannitol, quercetin, inositol, glucose, arabinose, rhamnose, caffeic-acid, sinapic-acid, quercetin-3-rhamnoside, quercetin-3-araboside, syringin, myristic acid, flavoyedorinin A and B.

**Toxicity** — Fatalities have been reported following ingestion of the berries. Children frequently suffer epileptiform convulsions following ingestion of the berries. "Contains viscotoxin, a mixture of toxic proteins which apparently affect RNA and DNA synthesis. Lethal doses of *Viscum* proteins produce anemia and hemorrhage in the liver, intestinal hemorrhage and fatty degeneration of the thymus in experimental animals."<sup>50</sup> The LD<sub>50</sub> i.p. in mice of the plant juice was 32 mg (dry weight) of juice per kilogram body weight. Fermentation renders the plant juice less toxic.